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Interstate quarantine
regulations of the U.S.

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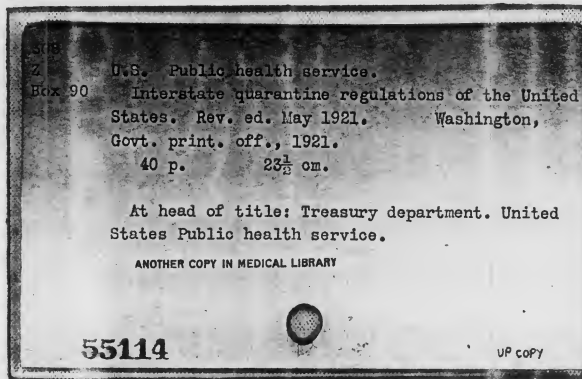
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TREASURY DEPARTMENT
UNITED STATES PUBLIC HEALTH SERVICE

INTERSTATE
QUARANTINE REGULATIONS
OF THE
UNITED STATES

REVISED EDITION

MAY, 1921



WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

TREASURY DEPARTMENT
UNITED STATES PUBLIC HEALTH SERVICE

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QUARANTINE REGULATIONS**

OF THE
UNITED STATES



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INTERSTATE QUARANTINE REGULATIONS.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, May 3, 1921.

To officers of the United States Public Health Service, State and local health authorities, and others concerned:

Upon the recommendation of the Surgeon General of the United States Public Health Service, and pursuant to the act of Congress approved February 15, 1893, entitled "An act granting additional quarantine powers and imposing additional duties upon the Marine Hospital Service," and other quarantine laws, the following interstate quarantine regulations to prevent the introduction of contagious and infectious diseases into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, are hereby promulgated for the information and guidance of all concerned.

All previous regulations inconsistent herewith are hereby revoked.

A. W. MELLON,
Secretary of the Treasury.

(4)

INTERSTATE QUARANTINE REGULATIONS.

TRANSPORTATION OF PERSONS OR THINGS INFECTED WITH COMMUNICABLE DISEASES.

QUARANTINABLE DISEASES.

1. For the purpose of interstate quarantine the following diseases shall be regarded as contagious and infectious diseases within the meaning of section 3 of the act approved February 15, 1893: Plague, cholera, smallpox, typhus fever, yellow fever, typhoid fever, paratyphoid, dysentery, pulmonary tuberculosis, leprosy, scarlet fever, diphtheria, measles, whooping cough, epidemic cerebrospinal meningitis, anterior poliomyelitis, Rocky Mountain spotted or tick fever, syphilis, gonorrhea, chancre, anthrax, influenza, pneumonia, epidemic encephalitis, septic sore throat, rubella, and chicken pox.

QUARANTINABLE PERSONS OR THINGS.

2. Any person or thing, either living or dead, which has been unduly exposed to or in intimate contact with or is infected with any of the diseases enumerated in section 1, except as otherwise provided in these regulations, shall be regarded as contagious or infectious until the contrary has been proved, and if found in any car, vessel, vehicle, or conveyance undergoing interstate transportation, shall be subjected to such inspection, disinfection, or other measures as may be necessary to prevent the spread of the infection from them.

OBSERVANCE OF TRAVEL REGULATIONS.

3. Common carriers shall not knowingly accept for transportation from one State or Territory or the District of Columbia into another State or Territory or the District of Columbia any person suffering from any of the diseases mentioned in section 1, except as hereinafter provided; and no person knowing that he is in the communicable stage of any of the diseases enumerated in section 1 shall travel on any car, vessel, vehicle, or other conveyance engaging in interstate traffic, except as hereinafter provided, nor shall any parent,

(5)

guardian, physician, nurse, or other person allow or procure such transportation for any minor, ward, patient, or other person under his charge.

PERSONS PROHIBITED FROM TRAVEL.

4. No person infected with plague, cholera, smallpox, yellow fever, or typhus fever shall be received by common carriers, their agents, or employees, upon any vessel, car, vehicle, or conveyance operating in interstate traffic.

TRAVEL OF LEPERS.

5. Common carriers shall not accept for transportation or transport in interstate traffic any person known by them to be afflicted with leprosy, nor shall any person so afflicted accept such transportation except as hereinafter provided.

(a) A person afflicted with leprosy shall be permitted to accept transportation upon presentation of permits from the Surgeon General of the United States Public Health Service, or his accredited representative, and from the health authorities of the States, Territories, or District of Columbia to and from which he intends to travel, stating that such person may be received under such restrictions, which shall be specified in each instance, as will prevent the spread of the disease, provided such person shall have agreed in writing to comply, and does so comply, with the restrictions as specified.

(b) Any person who presents symptoms of leprosy, and who is traveling or who has left the State where he resides in violation of the above regulations, shall be detained; and, if proved to be a leper, shall be returned to such State or removed to such Federal station as the Secretary of the Treasury may designate, and the proper health authorities notified.

TRAVEL OF DISEASED PERSONS.

6. Except as prohibited in section 3 and except leprosy, pulmonary tuberculosis, and venereal diseases provided for in other paragraphs of these regulations, common carriers shall not receive upon any car, vessel, or conveyance operating in interstate traffic any person known by them to be afflicted with any of the diseases enumerated in section 1, or any persons known to be a carrier of these diseases, unless removal and entrance permits have been granted by the State or local health officers at the places of departure and arrival, and unless such person is placed in a compartment separate from other passengers, is accompanied by a properly qualified nurse or other attendant, and unless such nurse or attendant has pledged himself or

herself in writing, to the common carrier, to comply with the following regulations, and does so comply, while in transit:

(a) Communication with the compartment within which the patient is traveling shall be restricted to the minimum consistent with the proper care and safety of the patient.

(b) All dishes and utensils used by the patient en route shall be placed in a 5 per cent solution of carbolic acid or other fluid of equivalent disinfecting value for at least one hour after they have been used and before being allowed to leave the compartment.

(c) All sputum and nasal discharges from the patient shall be received in gauze or paper, which shall be deposited in a paper bag or in a closed vessel and shall be destroyed by burning, or disinfected by immersing for at least one hour in a 5 per cent solution of carbolic acid or other solution of equivalent disinfecting value.

(d) Said nurse or attendant shall, after performing any service to the patient, at once cleanse the hands by washing them in a 2 per cent solution of carbolic acid or other fluid of equivalent disinfecting value.

(e) In the case of a person afflicted with typhoid fever, paratyphoid fever, or dysentery, the nurse or attendant shall pledge himself or herself in writing, to the common carrier, to comply with the following regulations while in transit, in addition to (a), (b), (c), and (d) of this section:

1. All urine and feces of the patient shall be received into a 5 per cent solution of carbolic acid or other fluid of equivalent disinfecting value, placed in a covered vessel, thoroughly mixed, and allowed to stand for at least two hours after the last addition thereto before being burned, destroyed, or emptied.

2. A sheet of rubber or other impervious material shall be carried and shall be spread between the sheet and the mattress of any bed that may be used by the patient while in transit.

3. Said nurse or attendant shall use all necessary precautions to prevent the access of flies to the patient or his discharges.

4. *Provided*, That if a person with typhoid, paratyphoid, or dysentery is presented at a railway station in ignorance of these regulations and his transportation is necessary as a life-saving or safe-guarding measure, an emergency may be declared, and the patient may be carried a reasonable distance in a baggage car if accompanied by an attendant responsible for his care and removal: *Provided also*, That regulations (a), (b), (c), (d), and (e) of this section shall be complied with in so far as the circumstances will allow, and that all bedding, clothing, rags, or cloths used by the patient shall be removed with him: *And provided further*, That any parts of the car which have become contaminated by any discharges of the patient shall be

disinfected as soon as practicable, but not later than the end of the run, by washing with a 5 per cent solution of carbolic acid or other fluid of equivalent disinfecting value.

TRAVEL OF TUBERCULOUS PERSONS.

7. Common carriers, their agents or employees, shall not receive for interstate transportation any person known by them to be afflicted with pulmonary tuberculosis in a communicable stage unless said person is provided with (a) a sputum cup made of impervious material and so constructed as to admit of being tightly closed when not in use; (b) a sufficient supply of gauze, papers, or similar articles of the proper size to cover the mouth and nose while coughing or sneezing; (c) a heavy paper bag or other tight container for receiving the soiled gauze, paper, or similar articles; and unless such person shall obligate himself to use the articles provided for in the manner intended, and to destroy said articles by burning or to disinfect them by immersing for at least one hour in a 5 per cent solution of carbolic acid or other solution of equivalent disinfecting value in a covered vessel.

TRAVEL OF VENEREALLY INFECTED PERSONS.

8. (a) Any person infected with syphilis, gonorrhea, or chancroid who wishes to engage in interstate travel must first obtain a permit, in writing, from the local health officer under whose jurisdiction he resides. This permit shall state that, in the opinion of the health officer, such travel is not dangerous to the public health.

(b) Any person infected with syphilis, gonorrhea, or chancroid who wishes to change his residence from one State to another must first obtain his release, in writing, from the local health officer. He shall inform the local health officer as to the place where he intends to reside, and shall agree, in writing, to report in person to the proper health officer within one week after arrival at his new residence. It shall be the duty of the health officer who issues the release to promptly notify the health officer under whose jurisdiction the infected person is to enter of its issue. This release shall contain the name and address of the infected person. The receiving health officer shall, in turn, report the arrival of the infected person to the health officer who issued his release and notify the State health officer of his State that a person infected with venereal disease has entered his jurisdiction.

(c) Any person infected with syphilis, gonorrhea, or chancroid who wishes to engage in interstate travel or change his residence shall agree to continue treatment under the direction of a reputable physician until the health officer, or his accredited representative, shall

have complied with the State board of health requirements for release of venereally infected persons.

SUGGESTED FORMS.

1. PERMIT TO ENGAGE IN INTERSTATE TRAVEL.

This is to certify that, in my opinion, _____ may
(Name of patient.)
engage in interstate travel without endangering the public health.

(Health officer.)

(Town.) (State.)

2. PERMIT TO CHANGE RESIDENCE.

Permission is hereby granted _____ to change his
(Name of patient.)
residence from _____, to _____
(Town.) (State.) (Town.)

(State.)

(Health officer.)

(Town.) (State.)

3. REQUEST FOR CHANGE OF RESIDENCE.

I, _____, desire to change my residence from _____
(Town.)

(State.) to _____ (State.) I hereby
(Town.)
acknowledge that I am infected with _____ and agree to report my condition to the local health officer at _____ within one week after my arrival.

I further agree to continue treatment for _____ under the direction of a competent physician until I shall have been released by the health officer.
(Signed) _____

4. NOTICE OF RELEASE.

(Place.)

(Date.)

JOHN DOE,
Health Officer,

(Town.) (State.)

This is to inform you that _____, who formerly resided at
(Town.) (State.)
_____, is infected with _____. He
(Town.) (State.)
has this day secured his release from this office and declared his intention to change his residence to _____. He has
(Town.) (State.)
agreed to report to you within one week after arrival.

(Health officer.)

5. NOTICE OF REPORT.

(Place.)

(Date.)

JOHN DOE,
Health Officer,

(Town.)

This is to inform you that -----, who formerly resided at -----, -----, reported at this office on ----- (Date.) and stated that he is infected with ----- He {had placed
or
will place } himself under the care of Doctor -----, of ----- (Health officer.)

SICK PASSENGER EN ROUTE.

9. In the event of the appearance of any disease mentioned in section 1, with the exception of tuberculosis and venereal diseases, in any person aboard any car, vessel, vehicle, or conveyance operating in interstate traffic, the common carrier shall at once isolate the sick person and remove him from the car, vessel, vehicle, or conveyance at the first convenient place at which reasonable provision may be had for the protection of the patient and the public health, and shall immediately notify the Surgeon General of the United States Public Health Service and the State and local health officer of the place at which the person was removed from such car, vessel, vehicle, or conveyance.

(a) In accordance with the foregoing paragraph, a yellow-fever case, occurring en route, shall be isolated in a compartment so screened as to prevent the entrance or exit of mosquitoes, or their access to the patient; and the patient shall not be disembarked in infestible territory unless thoroughly protected from mosquitoes, and unless permission for such disembarkation has been obtained from the State and local health officials having jurisdiction over the place of disembarkation.

CONVEYANCES VACATED BY INFECTED PERSONS.

10. Immediately after vacation by a person having any of the diseases mentioned in section 1, with the exception of pulmonary tuberculosis and venereal diseases, any berth, compartment, or state-room should be closed and not again occupied until properly cleaned and disinfected, and all bedding, blankets, and linen in any such space should be laundered or otherwise thoroughly cleaned and disinfected before being again used.

(a) In regard to a yellow-fever case, the compartment vacated by the patient shall be fumigated immediately upon disembarkation of patient in such manner as to insure the complete destruction of all mosquitoes contained therein.

CARS FROM YELLOW-FEVER LOCALITIES.

11. Common carriers shall neither cause, permit, nor allow to be hauled, removed, or transferred in interstate traffic any car, vessel, vehicle, or conveyance from a locality in which yellow fever prevails, unless there has been obtained from the Surgeon General of the United States Public Health Service, or his accredited representative, a certificate stating that said car, vessel, vehicle, or conveyance has been fumigated to destroy mosquitoes, or has been so safeguarded as to prevent the entrance of mosquitoes.

TRANSPORTATION OF THINGS EXPOSED TO INFECTION.

12. No person, firm, or corporation shall offer for use or shipment in interstate traffic, and no common carrier shall use or accept for shipment, or transport in interstate traffic, any article or thing known to have been unduly exposed to or in intimate contact with the contagion or infection of any of the diseases enumerated in section 1, unless a certificate has previously been obtained from the proper health authority¹ stating that the article or thing has been sterilized, pasteurized, or otherwise treated in such manner as to insure the article is free from the danger of conveying contagion or infection and, in the case of yellow fever, Rocky Mountain spotted or tick fever, or typhus fever, free from mosquitoes, ticks, or lice.

(a) All articles of food or drink for the use of passengers traveling in interstate traffic shall be so handled and stored as to prevent contamination with said contagion or infection.

(b) After notification in writing by the proper health authorities, common carriers shall not use or transport, or accept for transportation, in interstate traffic, milk from premises on which there exists a case of cholera, scarlet fever, diphtheria, epidemic sore throat, typhoid fever, or paratyphoid fever unless said milk is accompanied by a certificate that it has been properly pasteurized under official supervision.

TRANSPORTATION OF OYSTERS AND CLAMS.

13. After notification in writing by the proper authorities, common carriers shall not use or transport, or accept for transportation

¹The term "proper health authority" shall be construed to mean the health officer within whose jurisdiction the article or thing originates, or, during the presence of epidemic, the officer in charge of the measures to prevent the spread of same.

in interstate traffic, any oysters, clams, or other shellfish which have been grown, fattened, or handled in such a way as to render them liable to become agents in the interstate spread of disease, and the Surgeon General of the United States Public Health Service shall from time to time cause sanitary inspections to be made by officers of the Public Health Service of beds used for growing or fattening oysters, clams, or other shellfish and of shucking houses and other similar places in which oysters, clams, or other shellfish are shucked or otherwise prepared for interstate shipment, and he may forbid the interstate shipment of any such oysters, clams, or other shellfish which are produced or handled in a manner which will render them liable to become agents for the interstate spread of disease.

TRANSPORTATION OF SHAVING OR LATHER BRUSHES.

14. No person, firm, or corporation shall offer for shipment in interstate traffic, and no common carrier shall accept for shipment or transport in interstate traffic any shaving brush or lather brush unless manufactured in accordance with the following regulations:

(a) Shaving brushes or lather brushes shall be made only from hair or bristles known to be free from anthrax spores.

(b) Unless hair or bristles are known to be free from anthrax spores before such bristles are made up into shaving or lather brushes, their disinfection shall be accomplished by one of the following methods: (a) By boiling the hair or bristles for not less than three hours; (b) by exposing the hair or bristles to steam under not less than 15 pounds gauge pressure for no less than 30 minutes with preliminary vacuum of not less than 10 inches before turning on the steam; (c) by exposure to streaming steam for not less than six hours.

(c) All shaving or lather brushes shall be permanently marked with the name of the manufacturer or with a registered trade-mark in order to insure identification of the manufacturer and enforcement of these regulations.

SHIPMENT OF ANIMALS FROM ROCKY MOUNTAIN SPOTTED FEVER LOCALITIES.

15. During the period beginning March 15 and ending June 15 of each year, common carriers shall not accept for interstate shipment, and no person shall offer for interstate shipment, any cattle, horses, sheep, goats, elk, deer, or hogs originating in a locality where Rocky Mountain spotted fever is known to exist, unless said shipment is accompanied by a certificate from a Federal, State, or local health authority, or an inspector of the Bureau of Animal Industry of the

United States Department of Agriculture, or a State veterinarian or his deputy, setting forth that the said animals are free of all wood ticks, or have been freed thereof by hand picking, spraying, or dipping in a disinfectant solution of sufficient strength and for a sufficient time to kill all ticks attached to the said animals, such hand picking, spraying, or dipping to be accomplished immediately prior to leaving the infected territory.

PREVENTION SPREAD OF PLAGUE.

16. In the event of the appearance of human or rodent plague in any port or place within the United States, the Surgeon General of the United States Public Health Service shall establish such outgoing quarantine measures as will, in his opinion, prevent the introduction of the disease into another State or Territory or the District of Columbia: *Provided*, That freight which is known to have originated in rat-free warehouses, docks, or wharves, in rat-proof, rat-free cars, vessels, vehicles, or conveyances, may be granted pratique for interstate transportation when so certified by the Surgeon General of the United States Public Health Service or his accredited representative.

NOTIFICATION OF QUARANTINABLE DISEASES.

17. Officers of the United States Public Health Service and State, Territorial, and other health authorities who will undertake to enforce the interstate quarantine regulations, as provided by section 3 of the interstate quarantine law approved February 15, 1893, shall notify the Surgeon General of the United States Public Health Service immediately, by telegraph and letter, upon the occurrence of a case of cholera, yellow fever, typhus fever, or plague and shall render monthly reports as to the prevalence of other diseases notifiable in their respective jurisdictions.

(a) In the event of a sudden increase in the number of cases of smallpox, scarlet fever, diphtheria, typhoid fever, poliomyelitis (infantile paralysis), epidemic cerebrospinal meningitis, Rocky Mountain spotted or tick fever, or epidemic septic sore throat in any locality, the Surgeon General of the United States Public Health Service shall be immediately notified by telegraph and letter of such unusual outbreak or sudden increase by the officers and authorities mentioned in the preceding paragraph.

INTERSTATE SANITARY OFFICERS.

18. Officers of the United States Public Health Service shall cooperate with State, municipal, and other health authorities in the

execution of their regulations, as provided by section 3 of the act of February 15, 1893, and shall enforce these regulations and collect epidemiological and sanitary information and perform such other duties in such manner as the Secretary of the Treasury may approve.

WATER SUPPLIES.

WATER FOR PASSENGERS.

19. Water provided by any person, firm, company, or corporation for drinking or culinary purposes on any car, vessel, or other conveyance while engaged in interstate traffic shall be from a source which is approved by the Surgeon General of the United States Public Health Service as producing water of satisfactory sanitary quality and safety.

(a) Certificates for water supplies used for the aforesaid purposes shall be procured from the United States Public Health Service and filed by the common carrier, whether person, firm, company, or corporation, whenever the Surgeon General of the United States Public Health Service may direct, but not less often than semiannually, in March and September: *Provided*, That where such water supplies are under the adequate supervision of the respective State departments of health, certificates may be required but once annually, with the approval of the Surgeon General of the United States Public Health Service.

(b) Certificates concerning the safety and sanitary quality of such water shall be based upon its relative freedom from contamination, or exposure to contamination, by microorganisms and substances recognized as harmful or deleterious to the consumer's health or liable to spread infections or contagious disease, as determined through a survey of the sanitary conditions under which the supply is produced and the results of bacteriological and chemical analysis of samples of the water. In making such determinations, survey and laboratory methods which are acceptable to the Surgeon General of the United States Public Health Service shall be followed.

(c) Certificates for water supplies may be prepared by the respective State departments of health having jurisdiction over the sources of supply or by officers of the United States Public Health Service, and are to be forwarded to the Surgeon General of the United States Public Health Service for approval.

(d) Common carriers whether persons, firms, companies, or corporations, providing water from approved supplies shall cause such water to be handled from the source of supply to the delivery to consumers in such manner that the safety or sanitary quality of such water shall not be impaired. Water cooled for drinking pur-

poses shall be cooled in such manner that ice can not come into contact with such water.

(e) Water coolers and containers shall be cleansed at least once in each week while in use. The storage tanks for water for drinking and culinary purposes shall be drained and flushed regularly. Scrubbing of the interior of storage tanks on vessels, or the entrance into them for purposes other than repairing is forbidden.

(f) Certificates of inspection covering the methods of obtaining, purifying, and distributing water supplies for drinking and culinary purposes on vessels shall be procured from the United States Public Health Service and filed by the common carrier whenever the Surgeon General of the United States Public Health Service may direct, but in any case not less often than once a year.

(g) Portable hose or tubing that is used for filling drinking-water containers, or storage tanks from which such containers are filled, shall have metal nozzles with a smooth surface, which shall be protected from dirt and contamination, and before the free end or nozzle of said hose or tubing is put into the water container or storage tank it shall be flushed and washed by a plentiful stream of water.

(h) The provisions of this section shall also apply to vessels plying between foreign ports on or near the frontiers of the United States and adjacent ports in the United States.

WATER AT STATIONS.

20. Where water is supplied for the use of patrons, employees, or others at stations and a report is received from the United States Public Health Service that such supply is unsatisfactory or questionable as to safety and purity, the further use of such water at stations will depend upon the character of certificate issued by the United States Public Health Service.

SANITATION OF CARS AND VESSELS.

GENERAL SANITARY CONDITIONS.

21. All cars, vessels, vehicles, or conveyances while engaged in interstate traffic shall be maintained at all times in a clean and sanitary condition.

(a) Common carriers shall not permit, or cause, either the brushing of passengers' clothing in the body of any car, vessel, vehicle, or other conveyance operating in interstate traffic, or the cleaning by dry sweeping with an ordinary broom, or by dry dusting, while the same is occupied by passengers.

(b) Such equipment shall be cleaned thoroughly at intervals of not more than seven days, the cleaning to consist of scrubbing the

exposed floors with soap and water; similarly scrubbing the toilets and toilet-room floors; wiping down the woodwork with moist or oiled cloths; thorough dusting of upholstery and carpets by beating and brushing, or by means of the vacuum process or compressed air; washing or otherwise cleaning windows; and thorough airing.

(c) When offensive odors appear in toilets or other parts of the car, vessel, vehicle, or conveyance used in interstate traffic which are not obliterated and removed by cleaning, as in paragraph (b), said toilets or other parts shall be treated with a 1 per cent solution of formaldehyde or other odor-destroying substance.

(d) When a car, vessel, vehicle, or conveyance used in interstate traffic is known to have become infested with bedbugs, lice, fleas, or mosquitoes it shall be so treated as to destroy such insects effectively, and it shall not be used in service until such treatment has been given.

(e) The living quarters for the personnel of vessels shall be fumigated at least once every six months for the extermination of insects and vermin, and also upon the removal of a case or cases of any insect-borne disease.

COMMON TOWELS.

22. Common carriers shall not provide in cars, vessels, vehicles, or conveyances operated in interstate traffic, or in depots, waiting rooms, or other places used by passengers traveling from one State or Territory or the District of Columbia to another State or Territory or the District of Columbia, any towel for use by more than one person: *Provided*, That towels may be used again after having been cleansed and sterilized.

COMMON DRINKING CUP.

23. Common carriers shall not provide in cars, vessels, vehicles, or conveyances operated in interstate traffic, or in depots, waiting rooms, or other places used by passengers traveling from one State or Territory or the District of Columbia to another State or Territory or the District of Columbia, any drinking cup, glass, or vessel for common use: *Provided*, That this regulation shall not be held to preclude the use of drinking cup, glasses, or containers which are thoroughly cleansed or sterilized after use by each individual, nor shall it be held to preclude the use of sanitary devices for individual use only.

BRUSHING OF TEETH.

24. Spitting or blowing the nose into or brushing the teeth over wash basins in cars, vessels, vehicles, or conveyances operated in interstate traffic is prohibited. Separate basins for brushing the teeth shall be provided in the wash rooms of sleeping cars.

PREVENTION OF SPITTING.

25. Common carriers by land or water while engaging in commerce between any of the several States or Territories or the District of Columbia shall take adequate measures by the use of warning signs or cuspidors, or both, for the prevention of the soiling of cars, vessels, vehicles, or conveyances with sputum. The cuspidors shall be adequate in size and number, shall be provided in all sleeping and smoking cars, compartments, or rooms, and shall be maintained at all times in a clean and sanitary condition.

VENTILATION AND HEATING.

26. All cars, vessels, vehicles, or conveyances operating for the use of passengers traveling in interstate traffic shall be so ventilated as to insure an adequate supply of fresh air at all times, and so heated in cold weather as to maintain comfort, the temperature generally not to exceed 70° F., and in sleeping compartments or rooms not to exceed 60° F. at night after passengers have retired.

BEDDING.

27. Any common carrier, whether person, firm, or corporation, supplying sleeping accommodations for passengers traveling in interstate traffic shall furnish the bed, couch, or other appliance used for sleeping purposes with clean sheets and pillowcases which have not been used by any other person since last laundered: *Provided*, That blankets, pillows, and mattresses which have not been used by any person suffering from a disease mentioned in section 1, if physically clean and free from vermin, may be used if they are so enveloped as not to come in contact in any way with any occupant of such bed, couch, or other appliance for sleeping purposes.

TOILETS AND LAVATORIES.

28. Toilets and lavatories on cars, vessels, vehicles, or conveyances, including railway express and baggage cars, operating for the use of passengers or occupants traveling in interstate traffic, shall be of adequate size, design, and number and shall be maintained in a clean and sanitary condition. The toilets shall be supplied with toilet paper.

(a) The toilet rooms in all railway cars shall be locked or otherwise protected from use while trains are standing at stations, passing through cities, or passing over watersheds draining into reservoirs furnishing domestic water supplies, unless adequate watertight containers are securely placed under the discharge pipe. The

State health authority having jurisdiction shall designate the area of watersheds that may be affected by pollution from railroads and shall notify the managing officers of railroads as to the points between which all toilets shall be locked.

DINING CARS AND DINING ROOMS.

29. All dining cars, or dining rooms of vessels, shall be maintained at all times while in operation in interstate traffic in accordance with the following requirements, in addition to the other regulations. The words "dining car, or dining room of vessel" as used in these regulations shall be held to include all cars or rooms of vessels in which food is prepared or served.

(a) Dining cars or dining rooms of vessels shall be screened against the entrance of flies or other insects, and it shall be the duty of the employees to destroy flies or other insects that may gain entrance.

(b) A proper lavatory with soap and clean towels shall be provided in all dining cars or dining rooms of vessels for the use of employees and shall be kept in a clean and sanitary condition at all times.

(c) Dining-car or dining-room employees shall thoroughly cleanse their hands by washing with soap and water after using a toilet or urinal and immediately before beginning service.

(d) All cooking table and kitchen utensils, drinking glasses, and crockery used in the preparation or serving of food or drink in dining cars or dining rooms of vessels shall be thoroughly washed in boiling water and suitable cleansing material after each time they are used.

(e) No spoiled or tainted food, whether cooked or uncooked, shall be served in any dining car or dining room of vessel, and no milk or milk products shall be served unless the milk has been pasteurized or boiled.

(f) Refrigerators, food boxes, or other receptacles for the storing of fresh food in dining and buffet cars, or on vessels, shall be emptied and thoroughly washed with soap and hot water at least once in each seven days that they are in use.

(g) Garbage cans in sufficient number and with suitable tight-fitting covers shall be provided in dining cars, or on vessels, to care for all refuse food and other wastes, and such wastes shall not be thrown from the car, vessel, vehicle, or conveyance along the right of way within the limits of cities, towns, or villages, or within drainage areas furnishing domestic water supplies.

(h) No person shall serve as a cook, waiter, or in any other capacity in the preparation or serving of food in a dining car, or on a

vessel, who is known or suspected to have any communicable disease. All persons employed for such service shall undergo a physical examination by a competent physician before being assigned to service, and before returning to work after any disabling illness, and at such other times during their service as may be necessary to determine their freedom from such diseases, and shall be immediately relieved from service if found to be so afflicted.

(i) The person in charge of the dining car, or dining room of vessel, shall be responsible for compliance with all regulations pertaining thereto, and he shall make an inspection of the car or room each day for the purpose of maintaining a rigorous cleanliness in all portions thereof.

SANITATION OF STATIONS AND CAMPS.

SANITATION OF STATIONS.

30. All stations used by the traveling public, including waiting rooms, lunch rooms, restaurants, wash rooms, and toilets, shall be kept in a clean and sanitary condition at all times, to be insured by mechanical cleaning at regular intervals.

MIGRATORY WORKERS' CAMPS.

31. Common carriers, whether persons, firms, or corporations maintaining camps of migratory workers, shall at all times maintain such camps in a proper sanitary condition and shall take proper measures to maintain the camps so occupied in a vermin-free condition, and shall exercise such other precautions as will prevent the interstate spread of disease from such camps, and the Surgeon General may from time to time detail officers or employees of the United States Public Health Service to make such inspections as shall be necessary for the enforcement of this regulation.

APPENDIX A.

CERTIFICATION OF WATER USED BY COMMON CARRIERS FOR DRINKING AND CULINARY PURPOSES IN INTERSTATE TRAFFIC.

INSTRUCTIONS CONCERNING THE CERTIFICATION OF WATER PROVIDED FOR DRINKING AND CULINARY USE BY COMMON CARRIERS ENGAGING IN INTERSTATE TRAFFIC.

1. Semiannually, in March and September, or whenever the Surgeon General of the United States Public Health Service may direct, the sanitary quality and safety of water supplies which are provided for drinking and culinary purposes in interstate traffic will be certified through the cooperation of the United States Public Health Service and the respective State departments of health.

2. Every common carrier required by the interstate quarantine regulations of the United States to procure approval from the Surgeon General of the United States Public Health Service for all water supplies used by the carrier for drinking and culinary purposes in interstate traffic shall semiannually, in January and July, forward a list of the supplies, mentioning source and ownership, and make application for certificates for use of such water, one copy to be sent to the Surgeon General of the United States Public Health Service, and one copy to each State department of health having jurisdiction. After receipt of such lists and applications, the necessary surveys and examinations of such water supplies will be made by representatives of the State department of health having jurisdiction, and a certificate for each supply will be prepared by the State department of health in triplicate. One copy will be retained by the State department of health concerned and two copies will be forwarded to the Surgeon General of the United States Public Health Service for approval. After approval by the Surgeon General, one copy will be forwarded by the United States Public Health Service to the common carrier for filing.

3. Annually, or whenever the Surgeon General of the United States Public Health Service may direct, the water supply systems furnishing water for drinking and culinary purposes aboard vessels engaged in interstate traffic will be certified by the United States Public Health Service.

4. Vessel companies which are required by the interstate quarantine regulations of the United States to procure certification of water supply systems shall in January of each year forward a list in duplicate of all vessels and make application for certification of such systems thereon, one copy to be forwarded to the Surgeon General of the United States Public Health Service and one copy to be forwarded to each district engineer having supervision. After the necessary examination of such a system has been made by a representative of the United States Public Health Service, a certificate of inspection will be prepared in triplicate by the district engineer of the United States Public Health Service having jurisdiction. One copy will be retained by the district engineer and two copies will be forwarded to the Surgeon General of the United States Public Health Service for approval. After approval by the

Surgeon General, one copy will be forwarded by the United States Public Health Service to the vessel company, which shall post such certificate in a conspicuous place aboard the vessel concerned.

5. Upon receipt of an unfavorable certificate by a common carrier the use of the water supply for drinking and culinary purposes in interstate traffic shall be discontinued immediately. The common carrier must advise the Surgeon General of the United States Public Health Service, without delay, that the use of the supply has been discontinued.

In the case of vessel water systems for which unfavorable inspection certificates have been received by the vessel company, either the improvements recommended shall be made at once or the condemned system shall be abandoned immediately. The vessel company must advise the Surgeon General of the United States Public Health Service, without delay, of the action taken.

6. Placards stating that the use of the unsatisfactory water is forbidden will be posted over taps at stations through the State department of health having jurisdiction, where unfavorable certificates have been forwarded prohibiting the use of a water supply by a common carrier for drinking and culinary purposes in interstate traffic. On vessels, similar placards will be posted over taps by the United States Public Health Service.

7. If a new supply or modified system be substituted for one for which an unfavorable certificate has been issued, a certificate must be requested for such new supply or system by the common carrier, who has substituted it in lieu of the condemned supply or system.

8. The standards and methods for bacteriological analysis of waters as promulgated by the Secretary of the Treasury, are recommended in certifying the average water: *Provided*, That where the bacteriological data for a water supply averages in excess of these standards, a favorable certificate may be forwarded to the Surgeon General of the United States Public Health Service for approval if the sanitary survey shows definitely that such excess is without sanitary significance.

RECOMMENDATIONS REGARDING DATA UPON WHICH CERTIFICATION IS BASED.

1. In addition to the certificate for each source of supply, a report form or information blank should be furnished by the State department of Health to the Surgeon General of the United States Public Health Service. This information should include a description of the supply, method of development, and findings as to quality as determined by field inspection and laboratory examinations. Such information should be supplemented and corrected from time to time as subsequent data sheets and certificates are transmitted.

2. In analytical procedure, it is recommended that the culture media and methods used shall be in accordance with the specifications of the committee on standard methods of water analysis of the American Public Health Association, as set forth in "Standard Methods of Water Analysis" (A. P. H. A., 1920).

3. In furnishing chemical data, the regional "normal" content of the substances, if available, should also be given in parentheses, following the reported findings, in those cases where such information is pertinent.

4. In bacteriological analysis, the following standards and methods as promulgated by the Secretary of the Treasury on October 21, 1914, are recommended for the average supply:

(1) The total number of bacteria developing on standard agar plates, incubated 24 hours at 37° C., shall not exceed 100 per cubic centimeter; provided that the estimate shall be made from not less than two plates,

showing such numbers and distribution of colonies to indicate that the estimate is reliable and accurate.

(2) Not more than one out of five 10 c. c. portions of any sample examined shall show the presence of organisms of the *Bacillus coli* group when tested as follows:

(a) Five 10 c. c. portions of each sample tested shall be planted, each in a fermentation tube containing not less than 30 c. c. of lactose-peptone broth. These shall be incubated 48 hours at 37° C., and observed to note gas formation.

(b) From each tube showing gas more than 5 per cent of the closed arm of fermentation tube, plates shall be made after 48 hours' incubation upon lactose litmus agar or Endo's medium.

(c) When plate colonies resembling *B. coli* develop upon either of these plate media within 24 hours, a well-isolated characteristic colony shall be fished and transplanted into a lactose-broth fermentation tube, which shall be incubated at 37° C. for 48 hours.

For the purpose of enforcing any regulations which may be based upon these recommendations the following may be considered sufficient evidence of the presence of organisms of the *Bacillus coli* group:

Formation of gas in fermentation tube containing original sample of water
(a) development of acid-forming colonies on lactose litmus agar plates or bright red colonies on Endo's medium plates, when plates are prepared as directed as above under (b).

The formation of gas, occupying 10 per cent or more of closed arm of fermentation tube, in lactose-peptone broth fermentation tube inoculated with colony fished from 24-hour lactose litmus agar or Endo's medium plate.

These steps are selected with reference to demonstrating the presence in the samples examined of aerobic lactose fermenting organisms.

(5) It is recommended as a routine procedure, that in addition to five 10 c. c. portions one 1 c. c. portion and one 0.1 c. c. portion of each sample examined be planted in a lactose-peptone broth fermentation tube, in order to demonstrate more fully the extent of pollution in grossly polluted samples.

TREASURY DEPARTMENT.
THE PUBLIC HEALTH SERVICE.
WASHINGTON.

[Seal.]

CERTIFICATE OF EXAMINATION OF WATER PROVIDED FOR COMMON CARRIERS
ENGAGED IN INTERSTATE TRAFFIC.

(Common carrier.)

(Name of watering point, including State.)

(Source and ownership of water supply.)

The available records and data from observations made indicate that this water supply is ----- of satisfactory sanitary quality and safety and there-

fore the present use of the water for drinking and culinary purposes in interstate traffic is ----- permitted.

Approved by—

Surgeon General, U. S. P. H. S.

(Date.)

Indorsement by State health department.

(Name and title.)

(Place.)

(Date.)

CONCERNING DRINKING AND COOKING WATER ON VESSELS.

TREASURY DEPARTMENT.
March 3, 1921.

1921.
Department Circular No. 234.
Public Health Service.

To owners, agents, and masters of vessels operating in interstate traffic:

On and after April 15, 1921, any person, firm or corporation operating vessels in interstate traffic or between foreign ports on or near the frontiers of the United States and adjacent ports in the United States will be required to furnish on such vessels water for drinking or culinary purposes under one of the following conditions:

(a) If water for drinking or culinary purposes is not obtained ashore, it must be treated by an approved method.

(b) If water for drinking or culinary purposes is obtained ashore, it must be from an approved source or treated by an approved method.

On and after April 15, 1921, the piping system on all vessels must be so arranged that no connection can be made between the drinking-water system and any other water system aboard.

On and after April 15, 1921, an approved sign, stating that the water is unfit to drink, must be properly placed at every tap or other outlet from which water of an unsatisfactory sanitary quality and safety may be obtained. Acknowledgment of receipt of this letter is requested.

CIRCULAR OF INFORMATION.

In accordance with the provisions of the interstate quarantine regulations of the United States, relative to the supervision of water supplies on vessels, you are requested to furnish the following information in duplicate, one copy to be forwarded to the Surgeon General of the Public Health Service, Washington, D. C., and one to the district engineer's office.

For each vessel under your management kindly give (1) the name; (2) the sources from which water for drinking and culinary purposes is taken, furnishing data as to ownership of each supply and treatment processes employed, if

any; (3) lists of ports called at by vessel and pier locations; (4) kind of service the vessel is engaged in and the navigating period. The name and address of the general manager or other official in charge of the operation of the line is to be supplied.

DISTRICT CIRCULAR LETTER NO. 1.

To owners, agents, and masters of vessels operating in interstate traffic:

For expediting the administrative details in connection with department circular No. 234 relative to drinking-water supplies for vessels, two forms of certificates have been prepared:

1. *Certificate of examination of water provided by common carriers engaged in interstate traffic.* (To be filed at company office.)

This will certify approval or disapproval of the source of supply ashore and will not be necessary when water is purified aboard. Application for this certificate should be made to the State health officer.

2. *Certificate of inspection of drinking-water system on vessels.* (To be posted on vessel.)

This will certify approval or disapproval of the system for handling, storing, and distributing drinking water to and aboard vessels; and in case this water is purified aboard, will include approval or disapproval of the treatment apparatus used.

A temporary certificate of inspection of drinking-water systems on vessels will be issued for any vessel on receipt of an affidavit signed by the master of this vessel on a form, *master's statement of drinking-water system*, supplied by the district engineer. The latter form will be sent out on receipt of data for each vessel under your management requested in *Circular of information*.

The regular certificate of inspection of drinking-water systems on vessels will be issued only after an inspection of the water system aboard by a representative from the district engineer's office. Renewal of this certificate is to be obtained annually.

The following conditions or practices will constitute grounds for issuing provisional or unfavorable certificates:

1. Insanitary handling of water from sources of supply to storage tanks and to points of consumption.
2. Existence of "by-passes" around water purification apparatus. A "physical" disconnection such as the removal of short section of pipe or an equally effective measure will be insisted on. A single or double-check valve in the "by-pass" lines will not be approved unless effectively sealed. The use of "by-passes" in emergencies will be permitted, if emergency measures are taken to sterilize the drinking-water supply.
3. Failure to post warning signs over all taps, hydrants, or outlets at which water other than drinking water is available.
4. The use of lead or lead compounds in the water system aboard.
5. Having other than purified water available in galley or kitchen.
6. Failure to maintain in cleanly condition the water-storage tanks and the water-supply systems aboard vessels.

DISTRICT CIRCULAR LETTER NO. 2.

To owners, agents, and masters of vessels operating in interstate traffic:

Of the methods that have been tested thus far, the following have been found satisfactory for disinfecting aboard vessels water to be supplied for drinking and culinary purposes by carriers operating in interstate traffic: *Distillation,*

disinfection by steam, and ultra-violet ray disinfection. The following are statements of features of design for these apparatus which must be complied with for approval:

Still.—A still for furnishing drinking water on board vessels should consist of a boiling chamber where the heat is applied from a steam coil, this coil so arranged that it is easily removable for cleaning off scale; a condensing chamber where the steam from the boiling chamber is condensed; and a cooling coil where the temperature of this condensed steam is lowered. The construction of the whole apparatus should be such that there can be no possibility of any cooling water gaining access to the condensed steam. It will be permissible to use multi-effect stills if desired for economic reasons. It will also be permissible to use the condensed heating steam for supplying wash basins. If this is done, the size of the still can be reduced one-half, since there is slightly more condensed heating steam produced than distilled water in a single-effect still.

As a still can operate at all times under all conditions, it will only be necessary to install a still of such a size that twenty-four hours' capacity will meet a day's demand, having a storage tank large enough to take care of any heavy demand, such as may occur for a short time at intervals throughout the day.

Disinfection by steam jet.—With the system for disinfecting the water supply by heating with a steam jet, there is the same necessity for using care in the selection of the place of taking on water as where no purification process is used; therefore the apparatus should have a capacity great enough to take on an adequate supply within a period of about an hour. The apparatus should consist of a pump or injector for pumping the water and raising its temperature; a steam jet for further increasing the temperature to 220° F.; a retention tank holding five minutes' supply; a thermometer indicating the temperature; a self-recording thermostat automatically controlling a waste valve, and a valve leading into the cooling tank; two test cocks, one on the waste line and one on the line leading into the cooling tank; a coil around which cool water is circulated for reducing the temperature of the water to about 100° F.

Ultra-violet ray disinfection.—An apparatus for disinfecting the water supply by means of ultra-violet rays should be of such a capacity that the maximum demand for one minute should not exceed the capacity of the apparatus by more than fifty per cent, and should consist of the following parts: A pressure regulator, and an orifice, which will prevent the rated capacity of the apparatus being exceeded; a pressure rapid sand filter of such a size that it will not filter faster than three gallons per square foot per minute; an arrangement for causing the water to flow through the ultra-violet rays; a quartz mercury vapor lamp for producing the ultra-violet rays, this lamp to be operated on 220 volts; a device for preventing any water passing the apparatus when the lamp is not lighted and at its maximum efficiency, and which will automatically light the lamp when the current is turned on; a simple method for cleaning the quartz tube around which the water circulates, and a storage tank located on an upper deck for taking care of any excess in heavy demands, which may occur for a few minutes at a time, and for meeting the demand whenever the lamp is out; it will also be necessary for an extra lamp to be carried, in order to avoid having the apparatus out of commission in case of accidental breakage of a lamp. It is essential that a voltmeter be in the circuit to check the voltage across the lamp.

¹ Efficient hand-tilting apparatus for lamps will also be approved.

[Form 8963-A.]

TREASURY DEPARTMENT,

UNITED STATES PUBLIC HEALTH SERVICE.

CERTIFICATE OF INSPECTION OF DRINKING-WATER SYSTEMS ON VESSELS.

Name of vessel _____ Company _____ Address _____

192--

An inspection of the system for supplying water for drinking and culinary purposes on the above-named vessel made by _____ on _____, 192--, showed the water to be obtained from _____

The water is purified aboard as follows: _____

The storage and distribution system $\left\{ \begin{array}{l} \text{is not} \\ \text{is} \end{array} \right\}$ properly installed and connected so as to prevent contamination of the drinking water supply, and $\left\{ \begin{array}{l} \text{has not} \\ \text{has} \end{array} \right\}$ adequate provisions for regular cleaning.

The average results of the bacteriological analyses of _____ samples taken during the period _____ to _____, indicated the average B. coli content of this water to be _____ per 100 c. c., and the total content of 37° C. bacteria to be _____ per c. c. Samples are collected every _____ days.

The average results of the chemical analyses of _____ samples taken during the period _____ to _____ are as follows: _____

The inspection indicates this water-supply system $\left\{ \begin{array}{l} \text{is not} \\ \text{is} \end{array} \right\}$ so installed and connected that with careful operation a water of satisfactory sanitary quality and safety $\left\{ \begin{array}{l} \text{will not} \\ \text{will} \end{array} \right\}$ be supplied to consumers, and its use $\left\{ \begin{array}{l} \text{is not} \\ \text{is} \end{array} \right\}$ permitted.

This certificate shall be posted in a prominent place on the boat.

Surgeon General, U. S. Public Health Service.

Engineer.

[Form 8963-B.]

TREASURY DEPARTMENT,

UNITED STATES PUBLIC HEALTH SERVICE.

TEMPORARY CERTIFICATE OF INSPECTION OF DRINKING WATER SYSTEMS ON VESSELS.

Name of vessel _____ Company _____ Address _____

This temporary certificate of inspection of the drinking water system of the above-named vessel is issued in lieu of the regular certificate, on the sworn statement of the master of the vessel _____, 192 , relative to said drink-

ing water system. It shall remain in force not to exceed one year from date of issue and is to be returned to the Bureau of the Public Health Service upon expiration or when replaced by regular certificate.

The use of the drinking water system under the conditions stated in the master's statement is permitted.

This temporary certificate shall be conspicuously placed on the vessel.

Surgeon General,
U. S. Public Health Service.

District Engineer.

192

[Form 8963-G.]

TREASURY DEPARTMENT,

UNITED STATES PUBLIC HEALTH SERVICE.

MASTER'S STATEMENT OF DRINKING WATER SYSTEM.

Vessel company _____ Name of vessel _____ Owner or agent _____

The undersigned hereby certifies that a complete inspection was made on _____, 192 , of the system aboard the above-named vessel for treating, storing, and distributing water to be used for drinking and culinary purposes; that the apparatus for purifying water treated aboard has been properly installed and connected; that the necessary control appliances are in operating condition; that all by-passes around the treatment processes and all cross connections with other than drinking water systems have been physically disconnected; that warning signs have been posted over all conveniently available sources of other water; that no hydrants or water connections from systems other than for drinking water are located within the kitchen; and that the drinking water supply aboard is so handled as to not impair its sanitary quality or safety.

STATE OF _____ } ss:

Subscribed and _____ before me this _____ day of _____,
(Sworn to or affirmed.)

192 , by _____, master of S. S. _____

APPENDIX B.

DISINFECTANTS.¹

Burning.—Applicable to articles not worth conservative treatment.
Boiling.—Very efficient and of wide range of applicability. The articles must be wholly immersed for not less than 10 minutes in water actually boiling (212° F.). The addition of 1 per cent of carbonate of soda renders the process applicable to polished steel, cutting instruments, or tools (articles of aluminum excepted).

Steam.—(a) Flowing steam (not under pressure) when applied under suitable conditions is an efficient disinfecting agent. The exposure must be continued 30 minutes after the temperature has reached 212° F.

(b) Steam under pressure in a special apparatus without preliminary vacuum will disinfect, provided the process is continued 20 minutes after the pressure reaches 15 pounds per square inch. The air must be expelled from the apparatus at the beginning of the process. If impracticable to obtain the designated pressure, a longer exposure will accomplish the same result.

(c) *Steam under pressure with preliminary vacuum.*—An autoclave with vacuum attachment is the best apparatus for applying steam under pressure. The vacuum attachment is used to remove the air, thus promoting the penetration of the steam. A partial vacuum of 15 inches (mercury) is first produced. Steam is then admitted and the pressure raised to 10 pounds to the square inch. This pressure is maintained for 20 minutes. The production of the second vacuum removes the steam and facilitates drying.

Articles liable to be injured by steam, such as leather, furs, skins, rubber, trunks, valises, hats, and caps, bound books, silks, and woolens should not be disinfected by steam. Such articles should be disinfected by formaldehyde gas or by any of the agents allowed in these regulations which may be applicable thereto. Those which will be injured by wetting should be disinfected by a gaseous agent.

Clothing, textiles, and baggage, clean and in good condition, but suspected of harboring infection, can be efficiently and least injuriously disinfected by formaldehyde gas.

GASEOUS DISINFECTANTS.

Gaseous disinfectants are applied proportionately to the cubic capacity of the space which is determined by multiplying the three dimensions.

To prevent the escape of the gas from the inclosure to be disinfected, fireplaces, ventilators, cracks of doors and windows, and other openings can be stuffed with cotton, paper, cloths, etc., but they are best closed by pasting them over.

¹ A full discussion of disinfectants and their application in the prevention of communicable diseases may be found in Public Health Bulletin No. 42, 1917, Government Printing Office, Washington, D. C.

All articles to be disinfected should be well exposed to the action of the disinfectant, as the penetrating powers of all gaseous disinfectants are limited; therefore articles either should be hung up or otherwise freely exposed to the gas.

FORMALDEHYDE.

As a disinfectant formaldehyde gas has the advantage of not injuring fabrics and most colors. It is applicable to the disinfection of rooms, clothing, and fabrics, but should not be depended upon for bedding, upholstered furniture, and the like, when deep penetration is required. It is not poisonous to the higher forms of animal life and fails to kill vermin, such as rats, mice, roaches, bedbugs, etc. The method is not applicable to the holds of large vessels. For the most effective application of the gas a temperature of at least 65° F. and at least 65 per cent of saturation with moisture in the compartment are essential.

Many formaldehyde solutions do not contain 40 per cent of formaldehyde, and all are apt to deteriorate with time. It is therefore necessary to use a quantity in excess of the amount prescribed in these regulations unless the solution has been recently analyzed.

The following methods of evolving the gas may be used:

- (a) Autoclave under pressure, 3 to 12 hours' exposure.
- (b) Lamp generator, 6 to 18 hours' exposure.
- (c) Spraying, 12 to 24 hours' exposure.
- (d) Formaldehyde and dry heat in partial vacuum, 1 hour's exposure.
- (e) Chemical, as formalin-permanganate method of Russel.

The minimum number of hours' exposure as given above applies to empty rooms of tight construction containing smooth, hard surfaces; the maximum number of hours' exposure applying in all cases to textile and other articles of a similar kind requiring more or less penetration.

(a) *Autoclave under pressure.*—This method has considerable penetrating power when applied as detailed below. Rooms or apartments need no special preparation beyond the ordinary closing of doors and windows. Pasting, caulking, or chinking of ordinary cracks or crevices is not necessary. The doors of lockers and closets and the drawers of bureaus should be open. In this apparatus use formalin (40 per cent), with the addition of a neutral salt, such as calcium chloride (20 per cent). The gas must be evolved under a pressure not less than 45 pounds. After the gas is separated from its watery solution the pressure may be allowed to fall and steam projected into the compartment to supply the necessary moisture. Use not less than 10 ounces of formalin per 1,000 cubic feet, and keep the room closed for 3 to 12 hours after the completion of the process. For large rooms the gas must be introduced at several points as far apart as possible. It is applicable to the disinfection of clothing and fabrics suspended loosely in such a manner that every article is freely accessible to the gas from all directions.

(b) *Lamp generator.*—This method requires an apparatus producing formaldehyde by a partial oxidation of wood alcohol, and in using it the room or apartment should be rendered tight as practicable. Oxidize 24 ounces of wood alcohol per 1,000 feet and keep the room closed for 6 to 18 hours. When applied to clothing and textiles the articles should be suspended in a tight room and so disposed as to permit free access of the gas. The wood alcohol should be of 85 per cent strength and should not contain more than 5 per cent of acetone.

(c) *Spraying.*—The formalin (40 per cent) should be sprayed on sheets suspended in the room in such a manner that the solution remains in small drops on the sheet. Spray not less than 10 ounces of formalin (40 per cent) for each

1,000 cubic feet. Used in this way a sheet will hold about 5 ounces without dripping or the drops running together. The room must be tightly sealed in disinfecting with this process, and kept closed not less than 12 hours. The method is limited to rooms or apartments not exceeding 2,000 cubic feet. The formalin may also be sprayed upon the walls, floors, and objects in the room. This method is markedly interfered with by, and is not to be relied on at low temperatures, say below 72° F. At 43.5° F. very little formaldehyde is liberated, the formaldehyde being polymerized on the sheets.

(d) *Formaldehyde with dry heat in partial vacuum.*—This method has superior penetrating powers and is especially applicable to clothing and baggage. The requirements of this method are (1) dry heat of 140° F. sustained for one hour; (2) a vacuum of 15 inches (mercury); (3) formaldehyde evolved from a mixture of formalin with a neutral salt, in an autoclave under pressure, using not less than 30 ounces of formalin (40 per cent) for 1,000 cubic feet; and (4) a total exposure, under these combined conditions, of one hour.

(e) *Formalin-permanganate method.*—When formalin is poured over crystals of permanganate of potash a vigorous reaction takes place and a large quantity of formaldehyde gas is liberated. The reaction is over in a short time, about five minutes, and if a proper proportion of materials have been used, the residue is almost dry. The proper proportion is 2 pints of formalin to 1 pound of permanganate of potash. One pint of formalin for 1,000 cubic feet of space should be used if the temperature is 65° F. or less; a smaller amount may be used for higher temperatures, but not less than 10 ounces per 1,000 cubic feet. This method is extremely efficient on account of the rapidity with which the gas is liberated. The danger of fire should be guarded against, as the formaldehyde gas, being in a comparatively dry state, is inflammable in the presence of a flame, such as lighted matches, lamps, etc.

DISINFECTANTS USED IN THE LIQUID STATE.

CORROSIVE SUBLIMATE.

Corrosive sublimate is one of the most powerful germicides that we possess. It has the disadvantage, however, of corroding metals and of forming inert compounds with albuminous matter. It is, therefore, inadvisable to use it for disinfecting sputum, excreta, or under any condition in which it comes in contact with much albuminous or organic matter.

One part of corrosive sublimate will dissolve in 13.5 parts of cold water and in 2.1 parts of boiling water. It is therefore preferable to use hot water. The corrosive sublimate should be pulverized before attempting to dissolve it; even then it dissolves with some difficulty. The solubility is increased by using sea water for the solution or by adding 2 parts per 1,000 of sodium chloride (common salt) to the water employed. The water used should be free from organic matter.

The strength of solution used in disinfecting is usually 1 part of corrosive sublimate to 1,000 parts of water. This solution is made by dissolving 1 ounce of corrosive sublimate in 1,000 ounces of water—approximately 8 gallons. The solutions are best made in an earthen or wooden vessel, a wooden tub or barrel being suitable. The addition of a coloring matter will reduce the risk of the solution being drunk by mistake. As most of the commonly used coloring matters are rapidly precipitated by corrosive sublimate, probably the best agent is a colored metallic chloride, such as cupric chloride (green). The cupric salt has the added advantage of being germicidal.

Soiled clothing, bed linen, etc., may be disinfected by soaking an hour in a 1 to 1,000 corrosive sublimate solution, then removed, rinsed in clean water, and laundered. As corrosive sublimate is a mordant, stains will be fixed permanently in fabrics subjected to such a bath. Eating utensils should not be disinfected with bichloride owing to the danger of poisoning. Walls and wooden furniture may be washed with a solution of 1 to 1,000, and floors thoroughly mopped, allowing the disinfectant to dry on the surfaces so treated.

The hands may be bathed in a 1 to 1,000 solution of bichloride without serious injury, unless there is an individual susceptibility to the drug.

FORMALIN (SOLUTION OF FORMALDEHYDE, U. S. P.).

Formalin, a solution of formaldehyde gas in water, is a valuable disinfectant. It has the advantage of bichloride of mercury in that its action is not retarded by albuminous matter. It is not corrosive; articles are usually not injured by it. It is a good decolorant, and it is not so highly poisonous as is bichloride of mercury.

Formalin contains from 35 to 40 per cent of formaldehyde gas, but in referring to percentage strengths the percentage of formalin will be stated and not that of the gas. For instance, a 1 per cent solution of formalin contains formalin in the proportion of 1 to 100, but it contains formaldehyde gas only in the proportion of 1 to 250, provided the formalin contains 40 per cent formaldehyde gas. Therefore, to make a 5 per cent solution of formalin, 1 volume of formalin is added to 19 volumes of water; and to make a 10 per cent solution, 1 volume of formalin is added to 9 volumes of water, etc.

Formalin is well adapted to the disinfection of urine, feces, sputum, and other discharges; for, in addition to disinfecting, it also deodorizes them. For this purpose a 5 per cent solution and one hour's exposure are required. The substances should be thoroughly mixed. Allowance must be made for the dilution caused by mixing the formalin solution with the material to be disinfected. For instance, if 1 pint of feces is to be disinfected it should be mixed with 1 pint of a 10 per cent solution of formalin, which gives the 5 per cent strength required.

Formalin can not be used in the sick room, as the liberated gas is irritating; nor is it adapted to the washing of floors, walls, etc., for the same reason.

Soiled linen and bedclothing can be disinfected by one hour's immersion in a 5 per cent solution of formalin.

For the sterilization of brushes suspected of being contaminated with anthrax the following procedure may be employed: The brush should be soaked for four hours in a 10 per cent solution of formalin (by formalin is meant a 40 per cent solution of formaldehyde). The solution should be kept at a temperature of 110° F., and the brush so agitated as to bring the solution into contact with all hair or bristles.

PHENOL. SYNONYM: CARBOLIC ACID, C₆H₅OH.

Phenol is a very useful disinfectant. It is solid at ordinary temperature, but it can be liquefied either by heat or by the addition of about 8 per cent of water. One ounce of phenol dissolves in 1 pint of water (16 ounces), making approximately a 6 per cent solution. It dissolves in water with some difficulty; therefore, to insure its solution, hot water should be used and the mixture well agitated.

Phenol mixes with glycerin in all proportions. These mixtures may readily be diluted with water to form aqueous solutions of phenol of the desired strength.

As a disinfectant phenol is commonly used in aqueous solutions of 1 to 5 per cent. In these strengths phenol is not destructive to fabrics, colors, metals, etc. Therefore, it has a wide range of usefulness in disinfection. At it does not actively coagulate albuminous matter, it is useful for the disinfection of urine, feces, sputum, etc. For this purpose a 5 per cent solution is added to an equal volume of the excretions, the mass then thoroughly mixed and allowed to stand one hour before final disposal.

Solled linen, bedclothes, etc., are best disinfected by immersion for one hour in a 3 per cent solution, and the same strength solution should be used for mopping floors, walls, etc. After handling the sick or any objects possibly infected, such as bedpans, sputum cups, etc., the hands may be disinfected by washing them for two to five minutes in a 1 per cent solution of phenol. The hands should then be washed in alcohol in order to avoid the numbing effect of phenol. As phenol does not kill spores it should not be used in attempting to destroy the infection of tetanus, anthrax, or malignant oedema.

The foregoing applies to phenol only and not to crude carbolic acid which, unless subjected to preliminary treatment, is unsatisfactory.

Liquor cresolis compositus (U. S. Pharmacopoeia).—This is a more agreeable preparation of superior disinfecting power and also greater range of usefulness, and has the advantage of being less poisonous. Dilutions of 1 in 100 to 1 in 250 are used.

There are a number of proprietary disinfectants of approximately the same value as the United States Pharmacopoeia preparation just mentioned.

AGENTS FOR THE DESTRUCTION OF VERMIN.

In using gaseous insecticides, every care should be exercised to avoid the escape of the vermin from the inclosure during the process of killing; consequently all points of exit should be closed. Closets, bookcases, drawers, etc., likely to harbor or contain animal life, should be opened to allow access of the gas.

The following insecticides will be considered:

1. Sulphur dioxide.
2. Hydrocyanic acid gas.
3. Pyrethrum.

SULPHUR DIOXIDE.

As an insecticide sulphur does not require the presence of moisture, since it acts equally well in a dry as in a moist atmosphere. Therefore moisture should not be artificially produced, as the drier the atmosphere the less injury there will be to furnishings, colors, etc.

With all cracks and crevices closed to prevent their exit, a 1 per cent strength will kill flies and mosquitoes within two hours, and if the atmosphere is reasonably dry very little injury will be done to the ordinary room furnishings. A 2 per cent strength will kill rats within four hours, and a 5 per cent strength will destroy most bedbugs, roaches, lice, etc., within six hours, although some of these insects usually escape by seeking protection in crevices.

To obtain the desired strength of sulphur gas it is only necessary to remember that the burning of 1 pound of sulphur in 1,000 cubic feet of space produces approximately 1 per cent of the gas, 2 pounds, 2 per cent, etc.

Pot method.—This is the cheapest and simplest method of producing sulphur dioxide. The materials required are sulphur, pots, and a small quantity of alcohol.

As the combustion of sulphur is dependent upon the available oxygen of the air, the rapidity of the production of the sulphur dioxide will be governed by the area of the burning surface. It is therefore very important that broad shallow pots be used to insure rapid production.

Sufficient pots should be available so that a depth of not more than 1½ to 2 inches of sulphur will have to be placed in each pot, although necessity sometimes requires a greater depth than this.

Ordinary "Dutch ovens," or iron buckets, may be used, but the best pot for the purposes is one with a flat bottom 12 to 18 inches in diameter, and with sides about 4 inches high. The sulphur should be sloped toward the center so as to form a crater or depression.

Theoretically, the complete combustion of 1 pound of sulphur in a space of 1,000 cubic feet produces 1.2 per cent (by volume) at 85° C. of sulphur dioxide, though 1 per cent is about what is produced in actual practice. Therefore, as 5 per cent is required to kill certain vermin, it is necessary to burn 5 pounds of sulphur for 1,000 cubic feet to be disinfected. After estimating the cubic space to be disinfected the sulphur should be weighed, allowing 5 pounds for every 1,000 cubic feet of space. When using stick sulphur it should be coarsely broken up. Finely ground or sublimed sulphur does not burn as well under ordinary conditions of fumigation as the medium-sized irregular lumps.

The pots should be distributed in the rooms to be disinfected according to the size of the rooms and number of pots.

When everything is ready, the sulphur is sprinkled with alcohol and ignited. A convenient and safe method of igniting the alcohol on the sulphur is to throw a lighted match into the pot while the head is still blazing. This ignites the alcohol, which in turn ignites the sulphur. Less alcohol will be used if a ball of cotton waste the size of a goose egg is saturated with alcohol, and placed in the sulphur and ignited. This also prevents sputtering from the accumulation of alcohol under the burning sulphur. Burning can also be started by placing a shovelful of live coals in the sulphur.

The sulphur dioxide does not begin to come off in large quantities immediately after ignition is started, so it is practicable for one operator to start a number of pots. After igniting he should make sure that the sulphur is burning in all pots, then he should close the door of exit and seal its cracks by pasting.

When the sulphur has been burning half an hour, search should be made for sulphur fumes escaping from any openings that may have been overlooked and close them.

Leave the apartment or room closed for eight hours, and then open doors and windows and allow the remaining sulphur fumes to blow out. It is well to leave the windows so they can be opened from the outside, otherwise entrance to the rooms may be impossible for an hour or more. The rooms can usually be occupied in two or three hours after opening the doors and windows.

The burning sulphur causes the pots to become very hot, and to avoid danger from fire it is necessary to place them upon objects not combustible or injured by heat. Brick, sand, stones, or suitable pieces of metal may be used for this purpose. As a protection against fire the use of a pan of water beneath the pot is safest and most convenient. If dry gas is desired, the pot should be raised so that the water does not touch its bottom; if moisture is desired, the pot is set directly in the water.

In the past sulphur dioxide has been used extensively as a germicide. In order to have any appreciable bactericidal powers it must be used in the presence of moisture. Under these conditions it is a fairly good surface disinfectant, but its powers of penetration are very limited. In the presence of moisture the

sulphur dioxide (SO_2) forms sulphurous acid (H_2SO_3) which is the active germicidal agent. Unfortunately in the combustion of sulphur a certain amount of sulphur trioxide (SO_3) may be found which, with water, forms sulphuric acid (H_2SO_4). This is very injurious to household furnishings, fabrics, etc., and constitutes one of the great objections to sulphur dioxide as a germicide.

Liquid sulphur dioxide is well adapted to the destruction of insect and vermin life, as the gas is liberated in a short time. Two pounds of the liquid are equivalent to 1 pound of sulphur when burnt by the pot method.

Sulphur candles are sometimes useful for killing flies and mosquitoes, or where only a small percentage of the gas is required. Candles vary in weight, but their weight should be determined; for killing flies and mosquitoes not less than $1\frac{1}{2}$ pounds of candle should be used for each 1,000 cubic feet. The candles require only to be placed upon bricks and lighted; they usually burn easily. The usual time of exposure (two hours) is required.

HYDROCYANIC ACID GAS

This gas is very poisonous to all forms of animal life. It kills rats, mice, roaches, flies, fleas, mosquitoes, and bedbugs with certainty and very quickly. *In the hands of the inexperienced it is a very dangerous gas, as the least carelessness with it may result in the loss of human life, since it is deadly poisonous.* It is therefore unsafe and unwise to use hydrocyanic acid gas in occupied buildings. This gas is useful for destroying all forms of vermin in cars, granaries, stables, barns, poultry houses and other uninhabited buildings.

The paraphernalia required includes a tight wooden barrel (preferably of oak) for use in large spaces; earthenware jars or crocks for small compartments, and earthenware jugs or earboys for use as acid containers. A glass graduate is useful.

The gas is generated by mixing water, sulphuric acid, and a cyanide salt, either potassium¹ or sodium, in the following proportions:

To each ounce of potassium cyanide used 1 fluid ounce of commercial sulphuric acid 66B and 24 fluid ounces of water are necessary, the formula being 2:2:5.

To each ounce of sodium cyanide $1\frac{1}{2}$ fluid ounces of commercial sulphuric acid 66B and 2 fluid ounces of water are necessary, the formula being 2:3:4.

The necessary concentration of cyanide gas and the duration of exposure varies with the object sought, but the following may be employed:

(a) For destruction of mosquitoes: One-half ounce of sodium cyanide per 1,000 cubic feet of space, exposure one-half hour.

(b) For destruction of fleas: Two and one-half ounces of sodium cyanide per 1,000 cubic feet of space, exposure one-half hour.

(c) For destruction of rodents (rats and mice): Five ounces of sodium cyanide per 1,000 cubic feet of space, exposure for two hours.

(d) For destruction of lice: Ten ounces of sodium cyanide per 1,000 cubic feet of space, exposure for two hours.

(e) For destruction of bedbugs: Five ounces of sodium cyanide per 1,000 cubic feet of space, exposure for one hour.

The above standards apply to empty spaces. In compartments filled with merchandise or other materials the period of exposure should be doubled. The amounts necessary should be determined and the ingredients mixed immediately prior to each fumigation.

¹Commercial cyanide of potassium not infrequently has a fused chloride blended with it. Such preparations should not be used as the chloride affects the generation of the gas.

The compartment or space should be made tight to prevent the escape of the gas; all openings, cracks, etc., except the exit for the operator, should be well sealed. The doors and windows should be so arranged that they may be opened from the outside.

When the compartment is in readiness for fumigation the acid and water are mixed in the barrel or earthenware vessel, the acid being poured into the water and well mixed. It is well to allow the mixture to cool. The cyanide should not be added until the compartment is ready to be finally closed. The required amount of cyanide should be in a gauze bag, which is quickly put into the mixture of water and acid. The acid destroys the bag and acts on the cyanide with a rapid evolution of the gas. The operator should leave the compartment with all haste; otherwise he will be overcome by the gas, which is highly poisonous. The door of exit should then be quickly sealed.

A still safer method of adding the cyanide is to have the bag containing it suspended over the vessel by a string leading to the door or exit, from which place it may be lowered into the mixture with greater safety to the operator.

Great care should be taken when the compartment is opened. It is well to hold the breath when actually opening a door or window. It is not safe to stand in the breeze blowing from the compartment. Under no conditions should the building be entered until it has been thoroughly aired out, and then the first person to enter should be an experienced and responsible individual.

PYRETHRUM.

Pyrethrum is an inferior insecticide but is sometimes useful in small-scale operations, as in ridding living rooms of mosquitoes. It kills only a portion of the insects outright but stupefies most of the remainder so that they can be swept up and destroyed by burning or otherwise immediately after the exposure. It is not dangerous to man and requires evacuation of the premises for a comparatively short time. It is burned in the same manner as is sulphur by the pot method, using from 2 to 4 pounds per 1,000 cubic feet. If all windows in the room but one have been darkened, the dead and stupefied insects will for the most part be found collected near it. The time of exposure is usually two hours. Pyrethrum may also be used as a powder by blowing it with a bellows into the hiding places of the insects.

APPENDIX C.

QUARANTINE LAWS OF THE UNITED STATES.

An act to prevent the introduction of contagious diseases from one State to another and for the punishment of certain offenses.

(U. S. Stats. at Large, vol. 26, ch. 51, p. 31. Approved Mar. 27, 1890.)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That whenever it shall be made to appear to the satisfaction of the President that cholera, yellow fever, smallpox, or plague exists in any State or Territory, or in the District of Columbia, and that there is danger of the spread of such disease into other States, Territories, or the District of Columbia, he is hereby authorized to cause the Secretary of the Treasury to promulgate such rules and regulations as in his judgment may be necessary to prevent the spread of such disease from one State or Territory into another, or from any State or Territory into the District of Columbia, or from the District of Columbia into any State or Territory, and to employ such inspectors and other persons as may be necessary to execute such regulations to prevent the spread of such disease. The said rules and regulations shall be prepared by the Supervising Surgeon General of the Marine-Hospital Service under the direction of the Secretary of the Treasury. And any person who shall willfully violate any rule or regulation so made and promulgated shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine of not more than five hundred dollars, or imprisonment for not more than two years, or both, in the discretion of the court.

SEC. 2. That any officer, or person acting as an officer, or agent of the United States at any quarantine station, or other person employed to aid in preventing the spread of such disease, who shall willfully violate any of the quarantine laws of the United States or any of the rules and regulations made and promulgated by the Secretary of the Treasury as provided for in section one of this act, or any lawful order of his superior officer or officers, shall be deemed guilty of a misdemeanor, and upon conviction shall be punished by a fine of not more than three hundred dollars or imprisonment for not more than one year, or both, in the discretion of the court.

SEC. 3. That when any common carrier or officer, agent, or employee of any common carrier shall willfully violate any of the quarantine laws of the United States, or the rules and regulations made and promulgated as provided for in section one of this act, such common carrier, officer, agent, or employee shall be deemed guilty of a misdemeanor, and shall, on conviction, be punished by a fine of not more than five hundred dollars, or imprisonment for not more than two years, or both, in the discretion of the court.

An act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service.

(U. S. Stats. at Large, vol. 27, ch. 114, p. 449. Approved Feb. 15, 1893.)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it shall be unlawful for any merchant ship or other vessel from any foreign port or place to enter any port of the United States except in accordance with the provisions of this act and with such rules and regulations of State and municipal health authorities as may be made in pursuance of or consistent with this act; and any such vessel which shall enter, or attempt to enter, a port of the United States in violation thereof shall forfeit to the United States a sum, to be awarded in the discretion of the court, not exceeding five thousand dollars, which shall be a lien upon said vessel, to be recovered by proceedings in the proper district court of the United States. In all such proceedings the United States district attorney for such district shall appear on behalf of the United States; and all such proceedings shall be

conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

SEC. 2. That any vessel at any foreign port clearing for any port or place in the United States shall be required to obtain from the consul, vice consul, or other consular officer of the United States at the port of departure, or from the medical officer where such officer has been detailed by the President for that purpose, a bill of health, in duplicate, in the form prescribed by the Secretary of the Treasury, setting forth the sanitary history and condition of said vessel, and that it has in all respects complied with the rules and regulations in such cases prescribed for securing the best sanitary condition of the said vessel, its cargo, passengers, and crew; and said consular or medical officer is required, before granting such duplicate bill of health, to be satisfied that the matters and things therein stated are true; and for his services in that behalf he shall be entitled to demand and receive such fees as shall by lawful regulation be allowed, to be accounted for as is required in other cases.

The President, in his discretion, is authorized to detail any medical officer of the Government to serve in the office of the consul at any foreign port for the purpose of furnishing information and making the inspection and giving the bills of health hereinbefore mentioned. Any vessel clearing and sailing from any such port without such bill of health, and entering any port of the United States, shall forfeit to the United States not more than five thousand dollars, the amount to be determined by the court, which shall be a lien on the same, to be recovered by proceedings in the proper district court of the United States. In all such proceedings the United States district attorney for such district shall appear on behalf of the United States; and all such proceedings shall be conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

SEC. 3. That the Supervising Surgeon General of the Marine-Hospital Service shall, immediately after this act takes effect, examine the quarantine regulations of all State and municipal boards of health, and shall, under the direction of the Secretary of the Treasury, cooperate with and aid State and municipal boards of health in the execution and enforcement of the rules and regulations of such boards and in the execution and enforcement of the rules and regulations made by the Secretary of the Treasury to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, and into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia; and all rules and regulations made by the Secretary of the Treasury shall operate uniformly and in no manner discriminate against any port or place; and at such ports and places within the United States as have no quarantine regulations under State or municipal authority, where such regulations are, in the opinion of the Secretary of the Treasury, necessary to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, and at such ports and places within the United States where quarantine regulations exist under the authority of the State or municipality which, in the opinion of the Secretary of the Treasury, are not sufficient to prevent the introduction of such diseases into the United States, or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, the Secretary of the Treasury shall, if in his judgment it is necessary and proper, make such additional rules and regulations as are necessary to prevent the introduction of such diseases into the United States from foreign countries, or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, and when such rules and regulations have been made they shall be promulgated by the Secretary

of the Treasury, and enforced by the sanitary authorities of the States and municipalities, where the State and municipal health authorities will undertake to execute and enforce them; but if the State or municipal authorities shall fail or refuse to enforce said rules and regulations the President shall execute and enforce the same and adopt such measures as in his judgment shall be necessary to prevent the introduction or spread of such diseases, and may detail or appoint officers for that purpose. The Secretary of the Treasury shall make such rules and regulations as are necessary to be observed by vessels at the port of departure and on the voyage, where such vessels sail from any foreign port or place to any port or place in the United States, to secure the best sanitary condition of such vessel, her cargo, passengers, and crew, which shall be published and communicated to and enforced by the consular officers of the United States. None of the penalties herein imposed shall attach to any vessel or owner or officer thereof until a copy of this act, with the rules and regulations made in pursuance thereof, has been posted up in the office of the consul or other consular officer of the United States for ten days in the port from which said vessel sailed; and the certificate of such consul or consular officer over his official signature shall be competent evidence of such posting in any court of the United States.

SEC. 4. That it shall be the duty of the Supervising Surgeon General of the Marine Hospital Service, under the direction of the Secretary of the Treasury, to perform all the duties in respect to quarantine and quarantine regulations which are provided for by this act, and to obtain information of the sanitary condition of foreign ports and places from which contagious and infectious diseases are or may be imported into the United States; and to this end the consular officers of the United States at such ports and places as shall be designated by the Secretary of the Treasury shall make to the Secretary of the Treasury weekly reports of the sanitary condition of the ports and places at which they are respectively stationed, according to such forms as the Secretary of the Treasury shall prescribe; and the Secretary of the Treasury shall also obtain, through all sources accessible, including State and municipal sanitary authorities throughout the United States, weekly reports of the sanitary condition of ports and places within the United States, and shall prepare, publish, and transmit to collectors of customs and to State and municipal health officers and other sanitarians weekly abstracts of the consular sanitary reports and other pertinent information received by him, and shall also, as far as he may be able, by means of the voluntary cooperation of State and municipal authorities, of public associations and private persons, procure information relating to the climatic and other conditions affecting the public health, and shall make an annual report of his operations to Congress, with such recommendations as he may deem important to the public interest.

SEC. 5. That the Secretary of the Treasury shall from time to time issue to the consular officers of the United States and to the medical officers serving at any foreign port, and otherwise make publicly known, the rules and regulations made by him, to be used and complied with by vessels in foreign ports, for securing the best sanitary conditions of such vessels, their cargoes, passengers, and crew, before their departure for any port in the United States and in the course of the voyage, and all such other rules and regulations as shall be observed in the inspection of the same on the arrival thereof at any quarantine station at the port of destination, and for the disinfection and isolation of the same, and the treatment of cargo and persons on board, so as to prevent the introduction of cholera, yellow fever, or other contagious or infectious diseases; and it shall not be lawful for any vessel to enter said port to discharge its cargo or land its passengers except upon a certificate of the health officer at such quarantine station certifying that said rules and regulations have in all respects

been observed and complied with, as well on his part as on the part of the said vessel and its master, in respect to the same and to its cargo, passengers, and crew; and the master of every such vessel shall produce and deliver to the collector of customs at said port of entry, together with the other papers of the vessel, the said bills of health required to be obtained at the port of departure and the certificate herein required to be obtained from the health officer at the port of entry, and that the bills of health herein prescribed shall be considered as part of the ship's papers, and when duly certified to by the proper consular or other officer of the United States, over his official signature and seal, shall be accepted as evidence of the statements therein contained in any court of the United States.

SEC. 6. That on the arrival of an infected vessel at any port not provided with proper facilities for treatment of the same the Secretary of the Treasury may remand said vessel, at its own expense, to the nearest national or other quarantine station, where accommodations and appliances are provided for the necessary disinfection and treatment of the vessel, passengers, and cargo, and after treatment of any infected vessel at a national quarantine station, and after certificate shall have been given by the United States quarantine officer at said station that the vessel, cargo, and passengers are each and all free from infectious disease, or danger of conveying the same, said vessel shall be admitted to entry to any port of the United States named within the certificate. But at any ports where sufficient quarantine provision has been made by State or local authorities the Secretary of the Treasury may direct vessels bound for said ports to undergo quarantine at said State or local station.

SEC. 7. That whenever it shall be shown to the satisfaction of the President that by reason of the existence of cholera or other infectious or contagious diseases in a foreign country there is serious danger of the introduction of the same into the United States, and that notwithstanding the quarantine defense this danger is so increased by the introduction of persons or property from such country that a suspension of the right to introduce the same is demanded in the interest of the public health, the President shall have power to prohibit, in whole or in part, the introduction of persons and property from such countries or places as he shall designate and for such period of time as he may deem necessary.

SEC. 8. That whenever the proper authorities of a State shall surrender to the United States the use of the buildings and disinfecting apparatus at a State quarantine station the Secretary of the Treasury shall be authorized to receive them and to pay a reasonable compensation to the State for their use, if, in his opinion, they are necessary to the United States.

SEC. 9. That the act entitled "An act to prevent the introduction of infectious or contagious diseases into the United States, and to establish a national board of health," approved March 3, 1879, be, and the same is hereby, repealed. And the Secretary of the Treasury is directed to obtain possession of any property, furniture, books, paper, or records belonging to the United States, which are not in the possession of an officer of the United States under the Treasury Department, which were formerly in the use of the National Board of Health or any officer or employee thereof.

An act to amend section two of the act approved February 15, 1893, entitled "An act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service."

(U. S. Stats. at Large, vol. 28, ch. 300, p. 372. Approved Aug. 13, 1894.)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section two of the act approved

February fifteenth, eighteen hundred and ninety-three, entitled "An act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service," is hereby amended by adding to the end of said section the following:

The provisions of this section shall not apply to vessels plying between foreign ports on or near the frontiers of the United States and ports adjacent thereto; but the Secretary of the Treasury is hereby authorized, when, in his discretion, it is expedient for the preservation of the public health, to establish regulations governing such vessels.

An act to amend "An act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service," approved February 15, 1893.

(U. S. Stats. at Large, vol. 31, ch. 836, p. 1086. Approved Mar. 3, 1901.)

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That "an act granting additional quarantine powers and imposing additional duties upon the Marine-Hospital Service," approved February 15, 1893, be amended by addition of the following sections:

SEC. 10. That the supervising Surgeon General, with the approval of the Secretary of the Treasury, is authorized to designate and mark the boundaries of the quarantine grounds and quarantine anchorages for vessels which are reserved for use at each United States quarantine station; and any vessel or officer of any vessel or other person other than State or municipal health or quarantine officers, trespassing or otherwise entering upon such grounds or anchorages in disregard of the quarantine rules and regulations, or without permission of the officer in charge of such station, shall be deemed guilty of a misdemeanor and subject to arrest, and upon conviction thereof be punished by a fine of not more than three hundred dollars or imprisonment for not more than one year, or both, in the discretion of the court. Any master or owner of any vessel, or any person violating any provision of this act or any rule or regulation made in accordance with this act, relating to inspection of vessels or relating to the prevention of the introduction of contagious or infectious diseases, or any master, owner, or agent of any vessel making a false statement relative to the sanitary condition of said vessel or its contents or as to the health of any passenger or person thereon, shall be deemed guilty of a misdemeanor and subject to arrest, and upon conviction thereof be punished by a fine of not more than five hundred dollars or imprisonment for not more than one year, or both, in the discretion of the court.

SEC. 11. That any vessel sailing from any foreign port without the bill of health required by section two of this act, and arriving within the limits of any collection district of the United States, and not entering or attempting to enter any port of the United States, shall be subject to such quarantine measures as shall be prescribed by regulations of the Secretary of the Treasury, and the cost of such measures shall be a lien on said vessel, to be recovered by proceedings in the proper district court of the United States and in the manner set forth above as regards vessels from foreign ports without bills of health and entering any port of the United States.

SEC. 12. That the medical officers of the United States, duly clothed with authority to act as quarantine officers at any port or place within the United States, and when performing the said duties, are hereby authorized to take declarations and administer oaths in matters pertaining to the administration of the quarantine laws and regulations of the United States.

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